

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

### **Listing of Claims:**

Claims 1-5 (canceled).

Claim 6 (currently amended): The automatic gain control circuit as specified in Claim 3 18 wherein the CSD multiplier adjusts the gain in real time.

Claim 7 (canceled).

Claim 8 (currently amended): An automatic gain control (AGC) circuit, comprising:  
an input adapted to receive a signal;  
a compression circuit coupled to the input having a compression ratio, the compression  
ratio being applied to the signal exceeding a first predetermined threshold, the compression  
ratio being applied as a function of a predetermined signal peak level,  
wherein said circuit further comprises a gain applied to the signal, which gain is not  
uniformly distributed to the signal,  
wherein the gain comprises a canonical signed digit (CSD) multiplier;  
a look-up table storing discrete sound pressure level (SPL) values and a second table  
storing information indicative of gain values; and  
The automatic gain control circuit as specified in Claim 7 further comprising a state  
machine tracking a peak level of the signal such that positions of an upper and lower SPL  
value is determined in one table.

Claim 9 (original): The automatic gain control circuit as specified in Claim 8 wherein the gain value in the second table is a function of the state machine tracking.

Claim 10 (currently amended): The automatic gain control circuit as specified in Claim 7 8 wherein the second table stores CSD codes rather than actual gain values.

Claim 11 (original): The automatic gain control circuit as specified in Claim 10 further comprising a table storing only a fraction of actual gain values.

Claim 12 (currently amended): An automatic gain control (AGC) circuit, comprising:  
an input adapted to receive a signal;  
a compression circuit coupled to the input having a compression ratio, the compression  
ratio being applied to the signal exceeding a first predetermined threshold, the compression  
ratio being applied as a function of a predetermined signal peak level,

wherein said circuit further comprises a gain applied to the signal, which gain is not  
uniformly distributed to the signal,

wherein the gain comprises a canonical signed digit (CSD) multiplier;  
a look-up table storing discrete sound pressure level (SPL) values and a second table  
storing information indicative of gain values,

wherein the second table stores CSD codes rather than actual gain values; and  
a table storing only a fraction of actual gain values,

The automatic gain control circuit as specified in Claim 11 wherein remaining actual  
gain values are determined by a scale factor.

Claim 13 (original): The automatic gain control circuit as specified in Claim 12 wherein the scale factor is a  $2^S$  scale factor.

Claim 14 (original): The automatic gain control circuit as specified in Claim 12 wherein the scale factor is a simple shift.

Claim 15 (canceled).

Claim 16 (previously presented): An automatic gain control (AGC) circuit, comprising:  
an input adapted to receive a signal;

a compression circuit coupled to the input having a compression ratio, the compression ratio being applied to the signal exceeding a first predetermined threshold, the compression ratio being applied as a function of a predetermined signal peak level,

wherein the compression circuit comprises a state machine having a first and second comparator and a first and second register, the first comparator comparing the input signal to the content of the first register and the second comparator comparing the input signal to the content of the second register,

wherein the content of the first register is moved to the second register when the input signal exceeds the first predetermined threshold.

Claim 17 (original): The automatic gain control circuit as specified in Claim 16 further comprising a third and fourth register, wherein the content of the third register is also responsively moved to the fourth register and the content of the third register is decreased by 1.

Claim 18 (currently amended): An automatic gain control (AGC) circuit, comprising:  
an input adapted to receive a signal;

a compression circuit coupled to the input having a compression ratio, the compression ratio being applied to the signal exceeding a first predetermined threshold, the compression ratio being applied as a function of a predetermined signal peak level,

wherein said circuit further comprises a gain applied to the signal, which gain is not uniformly distributed to the signal,

wherein the gain comprises a canonical signed digit (CSD) multiplier, and

The automatic gain control circuit as specified in Claim 3 wherein the gain has hysteresis.

Claim 19 (currently amended): An automatic gain control (AGC) circuit, comprising:  
an input adapted to receive a signal;  
a compression circuit coupled to the input having a compression ratio, the compression  
ratio being applied to the signal exceeding a first predetermined threshold, the compression  
ratio being applied as a function of a predetermined signal peak level,  
wherein said circuit further comprises a gain applied to the signal, which gain is not  
uniformly distributed to the signal,  
wherein the gain comprises a canonical signed digit (CSD) multiplier; and  
a look-up table storing discrete sound pressure level (SPL) values and a second table  
storing information indicative of gain values.

~~The automatic gain control circuit as specified in Claim 7 wherein the SPL values are~~  
uniformly distributed.

Claim 20 (currently amended): An automatic gain control (AGC) circuit, comprising:  
an input adapted to receive a signal;  
a compression circuit coupled to the input having a compression ratio, the compression  
ratio being applied to the signal exceeding a first predetermined threshold, the compression  
ratio being applied as a function of a predetermined signal peak level,  
wherein said circuit further comprises a gain applied to the signal, which gain is not  
uniformly distributed to the signal,  
wherein the gain comprises a canonical signed digit (CSD) multiplier; and  
a look-up table storing discrete sound pressure level (SPL) values and a second table  
storing information indicative of gain values.

~~The automatic gain control circuit as specified in Claim 7 wherein the SPL values are~~  
not uniformly distributed.

Claim 21 (currently amended): An automatic gain control (AGC) circuit, comprising:  
an input adapted to receive a signal;  
a compression circuit coupled to the input having a compression ratio, the compression  
ratio being applied to the signal exceeding a first predetermined threshold, the compression  
ratio being applied as a function of a predetermined signal peak level,  
wherein said circuit further comprises a gain applied to the signal, which gain is not  
uniformly distributed to the signal,  
wherein the gain comprises a canonical signed digit (CSD) multiplier;  
a look-up table storing discrete sound pressure level (SPL) values and a second table  
storing information indicative of gain values,  
wherein the second table stores CSD codes rather than actual gain values; and  
a table storing only a fraction of actual gain values,  
~~The automatic gain control circuit as specified in Claim 11~~ wherein the gain values are  
divided into blocks of numbers, the blocks being scaled with respect to each other.

Claim 22 (original): The automatic gain control circuit as specified in Claim 21 wherein  
the scaling of blocks is by a power-of-two.

Claims 23-33 (cancelled).